

CBO TESTIMONY

Statement of
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Director
Congressional Budget Office

before the
Subcommittee on Procurement and
Military Nuclear Systems
and the
Subcommittee on Research and Development
Committee on Armed Services
U.S. House of Representatives

April 29, 1992

NOTICE

This statement is not available for public release until it is delivered at 2:00 p.m. (EDT), Wednesday, April 29, 1992.



CONGRESSIONAL BUDGET OFFICE
SECOND AND D STREETS, S.W.
WASHINGTON, D.C. 20515

I appreciate the opportunity to testify today regarding the capability and cost of the tactical aircraft in the Air Force and the Navy. Over the next two decades, the Administration plans to reduce the number of the tactical air units in those two services; the remaining units will be modernized with four new or modified planes. The Congressional Budget Office (CBO) has analyzed the Administration's plan, and the results reveal both good and bad news.

The good news is that both the Air Force and Navy should be able to meet most of their numerical requirements for aircraft, though only if they are willing to tolerate older inventories of aircraft. Moreover, at least through the mid-1990s, the capability of U.S. tactical aircraft will far exceed the capability of key regional powers.

However, the Administration's plan also has its problems. The plan will be affordable only under optimistic assumptions about trends in costs to procure aircraft and the funds that will be available to buy them. Under less optimistic assumptions, the plan will require billions of dollars of additional funding, particularly during the next decade.

Problems of affordability could also exacerbate an apparent mismatch between fleet age and the order in which the four new or modified planes are to be developed and bought. The oldest fleet is being modernized last, a

younger fleet first. Thus, measured by the criterion of age, the Administration should alter the sequence of its planned purchases of aircraft. Moreover, though age is only one criterion in determining when planes should be replaced, it may be a more important indicator now that there is less need to replace planes in order to keep pace with enemy threats.

KEY MISSIONS AND TYPES OF AIRCRAFT

The planes that will be developed and bought during the coming two decades will perform three key missions:

- o Fighter mission--that is, attacking enemy planes in the air;
- o Medium-attack mission--that is, attacking ground targets at relatively long distances; and
- o Multirole mission, which includes both the fighter and attack missions.

F-22 Fighter Aircraft

The first of the four planes the Administration plans to buy is the Air Force's F-22 fighter. The F-22 will enter procurement in 1996 and will replace the

Air Force's current top-of-the-line fighter, the F-15 (see Table 1). F-22s are designed to have stealth characteristics and to fly at high speed without using an afterburner, as well as other improvements. The F-22s will also be expensive. According to current estimates by the Air Force, each will cost about \$80 million in today's dollars.

F/A-18E/F Multirole Aircraft

The "E/F" model of the Navy's F/A-18 is expected to enter procurement in 1997. The F/A-18 is a multirole aircraft that can carry out both the fighter and attack missions. Compared with the current model of the F/A-18, the E/F will be able to fly farther and will offer other improvements in capability. The new version of the F/A-18 is likely to become a mainstay of the Navy's fleet, eventually replacing F-14 fighters and some older F/A-18 models. According to Navy estimates, the E/F version could cost about \$55 million apiece -- approximately 40 percent more than the current model.

TABLE 1. NEW AND MODIFIED AIRCRAFT

Type	Mission	Older Aircraft that New Plane Will Replace	Year of Entering Production
F-22	Fighter	F-15	1996
F/A-18 E/F	Multirole	F-14, earlier models of the F/A-18	1997
AX	Medium attack	A-6, F-15E, F-111	2001
MRF	Multirole	F-16	2002

SOURCE: Congressional Budget Office.

AX Medium-Attack Aircraft

The first AX aircraft may enter production around 2001. The AX is expected to have stealth characteristics and to be capable of carrying large numbers of a variety of weapons over relatively long distances. Although primarily a medium-attack aircraft, the AX may also have some modest capability as a fighter. Each AX is expected to cost at least \$120 million.

Multirole Fighter

Last year, the Air Force announced its plan to develop a new Multirole Fighter (MRF). This plane, which might enter production early in the next decade, will eventually replace today's F-16 aircraft and will provide both attack and fighter capability. The Air Force is currently debating whether the plane should be a totally new aircraft or a variation of an existing plane, such as the F-16. The Air Force hopes to hold down the cost of the MRF to no more than \$35 million apiece, which argues in favor of altering an existing plane.

MEETING NUMERICAL REQUIREMENTS

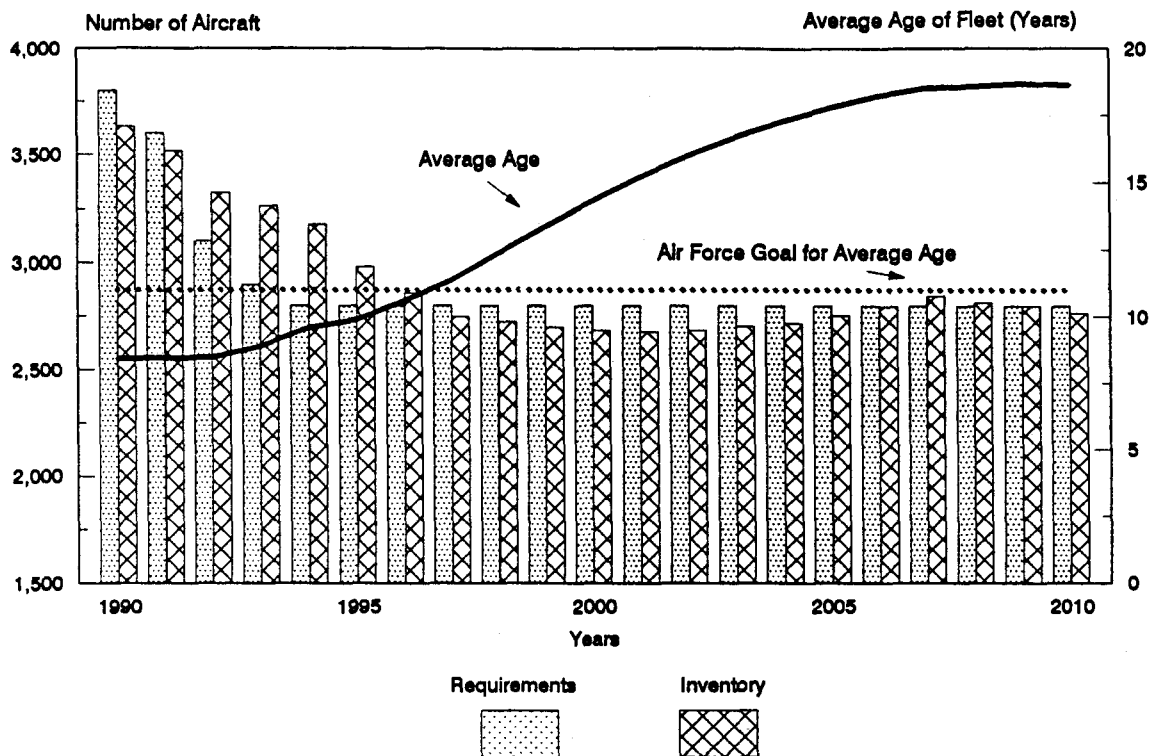
Under CBO's base-case assumptions about the Administration's plan for purchasing new aircraft and expected retirements of older aircraft, which are discussed below, the Air Force and Navy are buying enough new aircraft to meet most of their numerical requirements. But to meet those requirements, they will have to keep aircraft in their fleets longer. By 2010, the fleet of tactical aircraft in the Air Force would average about 19 years of age compared with an average age of eight years today (see Figure 1). The Navy's fleet would also age, though more modestly, reaching an average of 16 years in 2010 compared with 10 years today (see Figure 2).

These projected ages are outside of the range of historical experience. Indeed, all of these average ages are higher than the services have experienced during the history of tactical aviation using jet aircraft.

Effects of Older Fleets

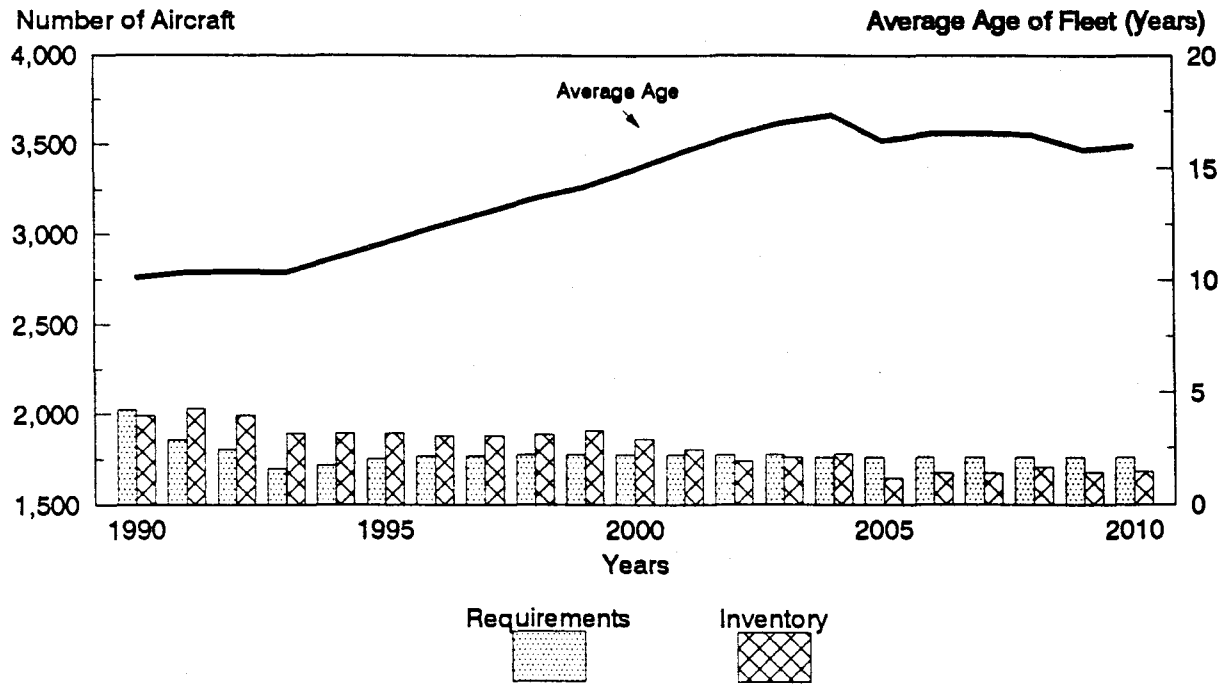
The marked growth in average age that occurs under these assumptions could cause problems. The average ages suggest that aircraft would be retained in the inventories well into their twenties and thirties. In the past, both the Air

FIGURE 1. AIR FORCE INVENTORY, REQUIREMENTS, AND AVERAGE AGE
 (Assumes Aircraft Are Retained to Meet Requirements – About 28 Years)



SOURCE: Congressional Budget Office estimates from Department of Defense and Air Force data.

FIGURE 2. NAVY INVENTORY, REQUIREMENTS, AND AVERAGE AGE
 (Assumes Aircraft Are Retained to Meet Requirements)



SOURCE: Congressional Budget Office estimates from Department of Defense and Navy data.

Force and Navy have expressed concerns about retaining aircraft that long. They have argued that maintenance costs might rise and that older planes might not be sufficiently capable in the face of enemy threats.

However, the services already operate some types of tactical aircraft into their twenties. For those aircraft, they seem to have overcome the maintenance problems associated with aging.

Moreover, maintenance problems associated with aging should be more closely linked to the number of hours flown than to chronological age. Thus, the problems should be lessened if the reduction in threats to U.S. security permits the services to fly their aircraft for fewer hours each year. For example, the Air Force might be able to reduce hours flown. It could do so if it retains relatively young aircraft, which would otherwise be retired during the next few years as the number of wings is reduced, and then flies each plane in the larger fleet for fewer hours. The Air Force might also be able to store some of the excess planes in today's inventory and bring them out later when inventories are tight. Both of these approaches could add to operating costs. The changes might, however, permit the Air Force to maintain acceptable levels of capability with an older fleet and so hold down procurement costs.

Trends in world events may also reduce concerns about the technological obsolescence of an older fleet. In the aftermath of the breakup of the Soviet Union, few countries seem likely to develop aircraft that are more capable than today's U.S. planes. Thus, older aircraft may be acceptable.

Finally, an effort to hold down average age could lead to a much smaller fleet. For example, if the Air Force adheres to its current retirement policies for tactical aircraft, by 2010 the service could fall short of its aircraft requirements by 40 percent (see Figure A-1 in the Appendix).

Base-Case Assumptions

These various projections assume that tactical air units will be reduced to the level of the Administration's base force by 1995 and remain at that level through 2010. Thus, in 1995 and beyond, the Air Force is assumed to maintain 26 wings of tactical aircraft plus several additional wings to provide defenses against strategic bombers. The Department of the Navy is assumed to maintain 13 wings of planes based on aircraft carriers, plus four wings in the Marine Corps.

These assumptions about future forces result in requirements for tactical aircraft in the Air Force that decline from about 3,800 planes in 1990 to about 2,800 planes by 1995. Requirements are assumed to remain at that level through 2010. The requirement for 2,800 planes results from the Air Force's assumption that it needs to have about 100 planes per wing (72 combat aircraft plus 28 planes to provide trainers and support aircraft). Requirements for the Navy and Marine Corps, which totaled about 2,000 planes in 1990, will decline to about 1,700 planes by 1995. Requirements are assumed to remain at that level through 2010.

In calculating average ages, CBO assumed that the services retain older aircraft in their inventories long enough to permit them to meet most of their numerical requirements. Only in a few cases, principally in the Navy during the latter part of the next decade, are inventories permitted to fall short of requirements. The Navy shortfall occurs because peacetime accidents will reduce the inventories of certain types of aircraft for which no replacements are being bought. Aircraft inventories and requirements are examined through the year 2010 in order to assess the long-term effects of programs now in development.

The projections also make assumptions about the numbers of new or modified planes that will be bought between now and 2010 (see Tables A-1

and A-2 in the Appendix for details). Wherever possible, these assumptions reflect current Administration plans. Where those plans are in flux or are not publicly available, the analysis in this testimony is based on unofficial sources and press reports.

As U.S. security requirements are refined, actual Administration plans will no doubt deviate from these base-case assumptions. In a period of rapidly changing security needs, however, it is important to be roughly right, even at the risk of being exactly wrong. These base-case assumptions should provide a reasonable guide to the broad shifts in cost and capability that are likely to occur if the Administration carries out its plan.

CAPABILITY OF TACTICAL AIRCRAFT

Even as forces get older and smaller, the capability of U.S. tactical aircraft will be overwhelmingly superior to that of selected regional powers, at least through the mid-1990s. For example, after forces are reduced to the level the Administration has proposed, U.S. tactical aircraft would still be about 22 times more capable than the current forces of North Korea, 24 times more capable than the forces of post-war Iraq, and 56 times better than Cuban

forces (see Figure A-2 in the Appendix). U.S. tactical air units would be about 17 times more capable than those of pre-war Iraq.

U.S. tactical aircraft are also superior, though by much smaller margins, to the planes of the Russian Federation. U.S. aircraft are about one-third more capable than those of the Russian Federation (see Figure A-2 in the Appendix).

Those estimates assume that Russia has all the forces allowed it under the limits of the Conventional Forces in Europe treaty now in effect. The estimates do not degrade Russian forces to account for any damage done to them during the current period when planes may be deteriorating because of lack of maintenance. The estimates also assume that all of those weapons are once again part of a cohesive military, which clearly is not the case today and could not happen quickly. Therefore, the estimates represent a worst-case approximation.

These comparisons of capability are based on a scoring method called the TASCFORM method that was developed for the Department of Defense by The Analytical Sciences Corporation. The method takes into account both

the quantity and quality of weapons. U.S. scores reflect contributions of both Air Force and Navy aircraft but do not assume any contributions from allies.

The TASCFORM method does not take into account many factors that could affect the outcome of a war, including training, logistics support, specific wartime scenarios, tactics, terrain, and luck. Nor do the scores reflect the losses that would occur on both sides during a war. Some of the missing factors, particularly training, could add to the U.S. advantage. But, because various factors are not reflected in the scores, the results are best viewed as indicators of combat potential and should not be used to predict the outcome of a future war.

The overwhelming superiority in combat potential enjoyed by U.S. forces does not necessarily mean that the forces the Administration plans to maintain would be too large or too modern. The United States may want overwhelming superiority in order to minimize casualties in a future war. The United States may also want the capability to fight in several places at once or the ability to conduct a war while maintaining a substantial number of forces deployed overseas to deter other conflicts from beginning. Moreover, the comparisons in this testimony are based on the current capability of selected regional powers. If those nations modernize their tactical air forces,

this country may need to respond with a modernization plan of its own to maintain its superiority.

The comparisons do suggest, however, that the United States enjoys a substantial margin of superiority in tactical air capability. If it chooses, the country can take time to assess carefully its plan for modernizing tactical air forces.

AFFORDABILITY OF THE PLAN

The affordability of the procurement costs under the Administration's plan is one factor that must enter any careful assessment of modernizing tactical air forces.

Plan Is Affordable Under Optimistic Assumptions

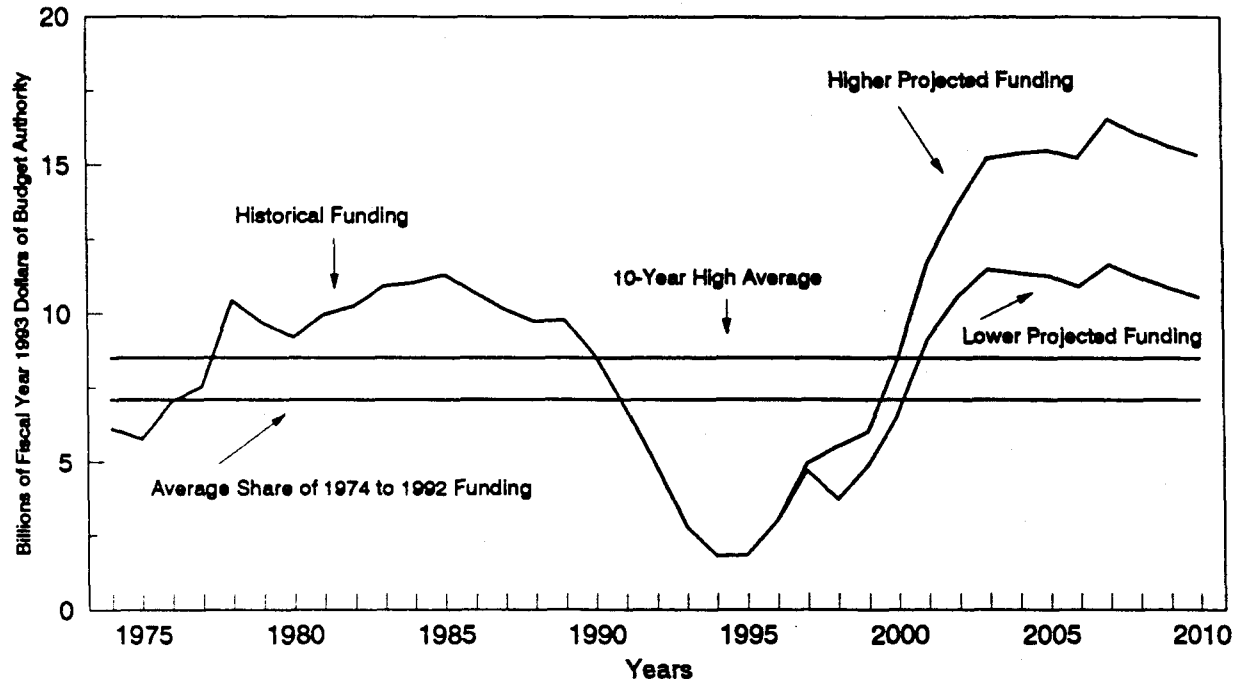
To assess affordability, CBO began with a conservative estimate of procurement costs. This lower estimate assumes that aircraft purchases follow the base-case assumptions discussed earlier in the testimony (see Tables A-1 and A-2 in the Appendix). Unit costs of aircraft are generally based on

service projections (see Table A-3 in the Appendix). Under the lower estimate, the Air Force and Navy together would require procurement budgets for tactical aircraft averaging \$9.6 billion a year during the 1998-2010 period, the years of CBO's projections (see Figure 3). (All costs are in constant 1993 dollars and include only the cost of purchasing major aircraft.)

To estimate available funds, CBO assumed that, during the next decade, the total defense budget would remain constant in real terms at the Administration's planned 1997 level and tactical aircraft would receive the same average share of the total budget as they received between 1974 and 1992. Under those assumptions, available funds would equal \$7.1 billion a year between 1998 and 2010, about \$2.5 billion a year less than funding that would be required during that period. Shortfalls would be larger in the Navy and smaller in the Air Force (see Figure A-3 in the Appendix).

There are assumptions that would make the Administration's plan affordable. For example, the overall defense budget might grow in real terms above the Administration's planned 1997 level. Perhaps more likely, the share of funds available for tactical aircraft could rise above its historical level. Assume, for example, that the Air Force devoted about 6.6 percent of its total budget to tactical aircraft compared with the historical average of 5.6 percent

FIGURE 3. HISTORICAL AND PROJECTED FUNDING FOR FIGHTER AND ATTACK AIRCRAFT FOR THE AIR FORCE AND NAVY COMPARED WITH AVERAGE HISTORICAL FUNDING



SOURCE: Congressional Budget Office estimates from Air Force, Navy, and Department of Defense data.

in 1974 to 1992, and that the Navy devoted 6.3 percent compared with 4.0 percent historically. Assume also that unit costs of aircraft do not rise above planned levels and that the total level of real defense spending remains at its planned 1997 level through 2010. Under these assumptions, enough funding would be available to finance procurement costs under the Administration's plan.

Those higher shares would be well above historical norms. In the Air Force, devoting 6.6 percent to tactical aircraft would about equal the average share devoted to tactical aircraft during 10 of the 19 years between 1974 and 1992 when shares were highest. The Navy never devoted 6.3 percent of its budget to tactical aircraft during any year between 1974 and 1992, but would have to do so for more than a decade to make its plan affordable. The higher shares may, however, be feasible in light of service plans. The Air Force, for example, will not be buying strategic bombers during the coming decade and may be able to devote those funds to buying tactical aircraft. The Navy may elect to buy few types of aircraft other than tactical planes, thereby freeing up money for them.

Less Optimistic Assumptions Suggest Problems

Unfortunately, for each assumption that suggests the Administration's plan is affordable, there are ones that suggest it is not. Unit costs of aircraft may rise above planned levels; depending on the stage of development, real increases of one-third to one-half could occur based on historical trends. Under a higher estimate of costs, which anticipates growth in costs at roughly these historical rates, funding shortfalls between 1998 and 2010 would average \$6.0 billion a year. This shortfall assumes that tactical aircraft continue to receive their average historical share of the total defense budget. Shortfalls could be much larger if there are reductions in the defense budget beyond those planned by the Administration, unless the changes made to achieve those additional cuts in defense spending also reduce the number of tactical aircraft that must be bought.

It may also be difficult for the services to increase the share of funds allocated to tactical aircraft and so avoid the need to alter their plans. To do so, tactical aircraft will have to beat out other major procurement programs that will be seeking increased funding in coming years, including strategic defenses, attack submarines in the Navy, and Army helicopters. Stiff competition for scarce funds may also come from categories of defense

spending other than procurement, such as research and development, medical care, and environmental cleanup.

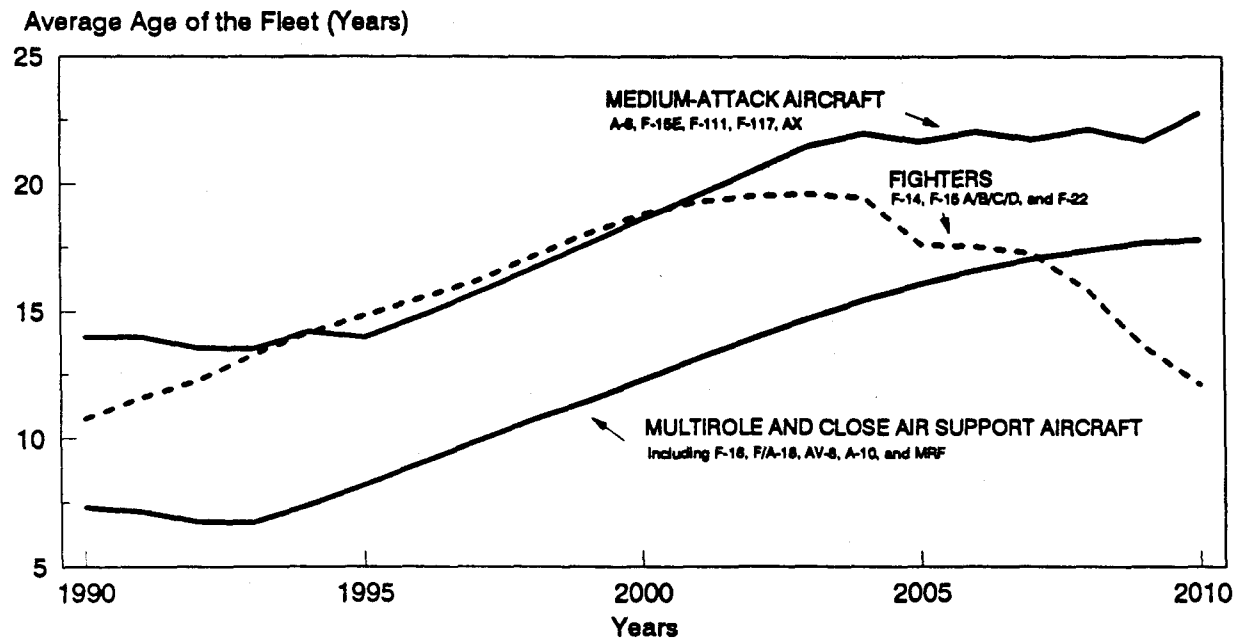
MISMATCH OF AGE AND ORDER OF MODERNIZATION

In addition to potential problems with affordability, there are questions about the order in which the Administration plans to buy its four new or modified planes. The order of the purchase should depend on which plane is needed first to meet national security needs. Average age is one factor that can help guide such decisions, since age is one indicator of technical obsolescence and deteriorating capability.

Yet, under the Administration's plan, there is a mismatch between age and order of procurement. The F-22 is to be procured first. It will modernize the fleet that carries out the fighter mission. Today, fighter aircraft have an average age of about 12 years (see Figure 4 and Figure A-4 in the Appendix). By the year 2010, the fighter mission category will represent the youngest fleet, averaging 12 years of age.

Under the Administration's plan, modernizing the medium-attack fleet would not begin until 2001, when the AX aircraft enters production. But

**FIGURE 4. AVERAGE AGE OF AIR FORCE AND NAVY
FIGHTER AND ATTACK AIRCRAFT BY MISSION CATEGORY**



SOURCE: Congressional Budget Office estimates from Department of Defense, Air Force, and Navy data.

medium-attack aircraft are the oldest planes in the inventory today, with an average age of about 14 years. By 2005, medium-attack aircraft will have an average age of about 22 years; by 2010, they will average 23 years of age. Hence, medium-attack aircraft are about 10 percent older than today's fighter aircraft, and they will be almost double the age of fighter aircraft in 2010.

At least to some extent, this mismatch between age and planned procurement was unplanned. Originally, the A-12 aircraft--a medium-attack plane--was expected to enter procurement before the F-22 fighter. Cancellation of the A-12 program, which was based on problems of cost and schedule rather than relative priorities among missions, led to the mismatch.

No matter why it occurred, these measures of average age imply retirement ages for medium-attack aircraft that are quite venerable. With the fleet as a whole averaging 23 years of age by 2010, some medium-attack aircraft--the carrier-based A-6 aircraft, for example--will not retire until they have completed more than 40 years of service. If technical problems or shortages of funding were to delay the AX program significantly, retirement ages of the oldest planes could be pushed toward the half-century mark, an extraordinary level.

It could be argued that this aging in the medium-attack fleet, and the resulting obsolescence of the aircraft, is less acceptable than in other types of aircraft. Older medium-attack aircraft do not generally have great stealth capability. Yet medium-attack aircraft are used to attack ground targets. Regional powers may be better able to acquire and operate ground-based radars and missiles that can effectively attack planes that do not have stealth characteristics than they are able to acquire capable fighter aircraft, which are expensive to buy and difficult to operate effectively.

Aircraft age may also be a more important factor in decisions about replacing aircraft than it was during the Cold War. Many decisions about replacement during the period of the Cold War reflected a need to modernize forces to keep pace with the enemy threat. Now, in the face of a reduction in that threat, replacement decisions may be determined more by physical deterioration of aircraft, and problems of physical deterioration typically increase with age.

Criteria other than age might justify the Administration's planned order for buying new planes. It is arguable, for example, that fighters need to be younger and more modern than other types of aircraft, in part because of the stress they experience during their high-speed operations. Nevertheless, age is an important criterion and, by that measure, a reordering of priorities may

be appropriate, especially if there are concerns that funding constraints could cause AX procurement to be delayed.

ALTERNATIVE APPROACHES TO MODERNIZING TACTICAL AIRCRAFT

Because of potential problems of affordability and the mismatch between age and order of procurement, the Congress might want to examine alternative strategies for buying new planes. CBO has not analyzed specific alternatives in detail, but the following approaches illustrate the range of choices.

Delay or Stretch Out Programs

The Administration and the Congress have frequently solved near-term problems of affordability by deferring or stretching out programs. Indeed, unofficial reports suggest that, compared with the current plan, the annual purchases of aircraft such as the MRF may be reduced when the next Administration plan is forwarded to the Congress. This strategy could be followed again by delaying the time when the AX or the MRF aircraft enter procurement or by reducing the annual purchases of F-22 and F/A-18 aircraft.

These approaches are inefficient because the Department of Defense eventually pays more without getting more planes. These approaches do, however, help eliminate near-term budget problems. Moreover, delays in modernization may be more acceptable today because, in the aftermath of the dissolution of the Soviet Union, other countries may not improve the capability of their fleets of tactical aircraft. Delaying the purchase of new aircraft does lead to an older fleet. But, as was noted earlier, the services may be able to offset the adverse effects of this aging by changes in policies regarding the use of existing aircraft.

Accept a Cheaper Mix of Aircraft

In recent years, the services have bought large numbers of multirole planes. These multirole aircraft typically do not perform any one mission as well as an aircraft dedicated to that mission. But multirole aircraft do provide substantial capability, which may be sufficient. In view of today's reduced threats, the services might be able to use multirole aircraft even more extensively in the future. For example, the Air Force, perhaps in concert with the Navy, could develop and buy the MRF or multirole fighter instead of the F-22. Alternatively, a cheaper mix of aircraft could be achieved by pursuing the "silver bullet" approach of buying very few highly capable planes (such as

the AX and F-22) coupled with a large number of less capable planes (such as the MRF and the current version of the F/A-18).

In its extreme form, a policy of accepting a cheaper mix of aircraft could lead to a delay in most or all programs of modernization. Instead, the United States would buy more of today's types of aircraft. Such a policy would be consistent with a world in which potential adversaries are not able to modernize their aircraft, or choose not to modernize them.

Accept Smaller Forces

If tactical air forces were reduced in size, modernizing the remaining forces might be more affordable. Forces could, for example, be reduced to the size proposed by the Chairman of the House Armed Services Committee in Option C of his recent report. Under that option, the Air Force would retain 18 wings rather than the 26 wings called for in the base force. The Navy would have 12 wings rather than 13 wings, and no fighter aircraft would be assigned to the Marine Corps. Some of these reductions might be achieved by consolidating missions, as the Chairman of the Senate Armed Services Committee has proposed.

If forces are reduced in size, requirements for procurement could be scaled back and costs would be held down. Also, operating costs would be reduced. The Chairman's Option C, for example, would eventually reduce operating costs for tactical aircraft by about \$3.6 billion a year. If these operating savings were devoted to procurement of tactical aircraft, rather than to reducing the defense budget, then the chances of being able to afford the Administration's planned program of modernization would be greatly increased.

Alter Sequencing to Mesh with Age

As it considers these various changes in the Administration's plan, the Congress may wish to alter the sequence in which tactical aircraft are developed and procured to mesh more closely with the age of aircraft. Based on age alone, the AX aircraft is the plane that is most needed because medium-attack aircraft are by far the oldest planes in the fleet. Indeed, some of these planes might not be retired until they are over 40 years of age.

It might be unwise to attempt to initiate procurement of the AX much before 2001, which is the year purchases would begin under CBO's base-case assumptions about the Administration's plan. Undue acceleration could cause

the sorts of problems that led to cancellation of the A-12 program, predecessor to AX. But it may be wise to avoid further delays in the AX program. Thus, if costs must be held down, action could be taken to ensure that funds for the AX program are not affected. That action might involve canceling or delaying the F-22 or deferring or canceling development of the E/F version of the F/A-18 aircraft.

CONCLUSION

Like so many defense programs, tactical aircraft will face tough budgetary problems in the coming years. The problems may be sufficiently serious to demand radical solutions, such as cutting the size of forces, consolidating missions, or accepting cheaper mixes of aircraft. The sequencing of the development and purchase of new and modified planes may also deserve review, lest problems of affordability delay the time when the oldest fleet of medium-attack aircraft is modernized.

**TABLE A-1. NEW AND MODIFIED AIRCRAFT PURCHASED UNDER BASE-CASE
ASSUMPTIONS ABOUT ADMINISTRATION'S PLAN
DURING THE 1993-1997 PERIOD**

Type of Aircraft	1993	1994	1995	1996	1997
F-22	0	0	0	4	4
Multirole Fighter	0	0	0	0	0
F/A-18 E/F	0	0	0	0	12
AX	0	0	0	0	0

SOURCE: Congressional Budget Office estimates from Department of Defense data.

TABLE A-2. NEW AND MODIFIED AIRCRAFT PURCHASED UNDER BASE CASE FOR THE PERIOD BEYOND 1997

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total 1998- 2010
F-22	12	24	36	48	48	48	48	48	48	48	48	48	48	552
Multirole Fighter	0	0	0	0	12	24	36	48	48	48	48	48	48	360
F/A-18E/F	12	18	30	48	48	48	48	48	48	72	72	72	72	636
AX	0	0	0	6	12	18	18	18	18	18	18	18	18	162

SOURCE: Congressional Budget Office from Air Force and Navy data.

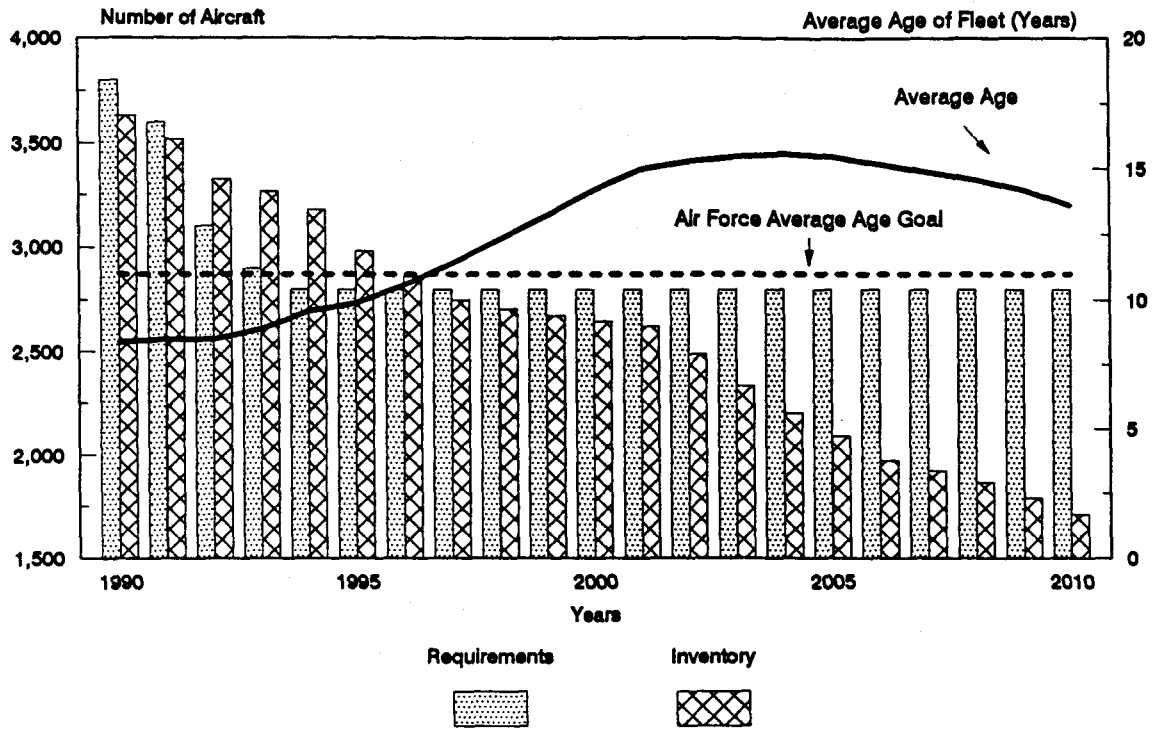
TABLE A-3. ASSUMPTIONS ABOUT THE UNIT COST OF AIRCRAFT

Type of Aircraft	Procurement Cost per Plane (Millions of 1993 dollars)		Total RDT&E for Program (Billions of 1993 dollars)
	Lower	Higher	
F-22	80	115	19.0
MRF	35	50	n.a.
AX	120	165	11.7
F/A-18E/F	55	75	4.9

SOURCE: Congressional Budget Office estimates from Department of Defense and Navy data.

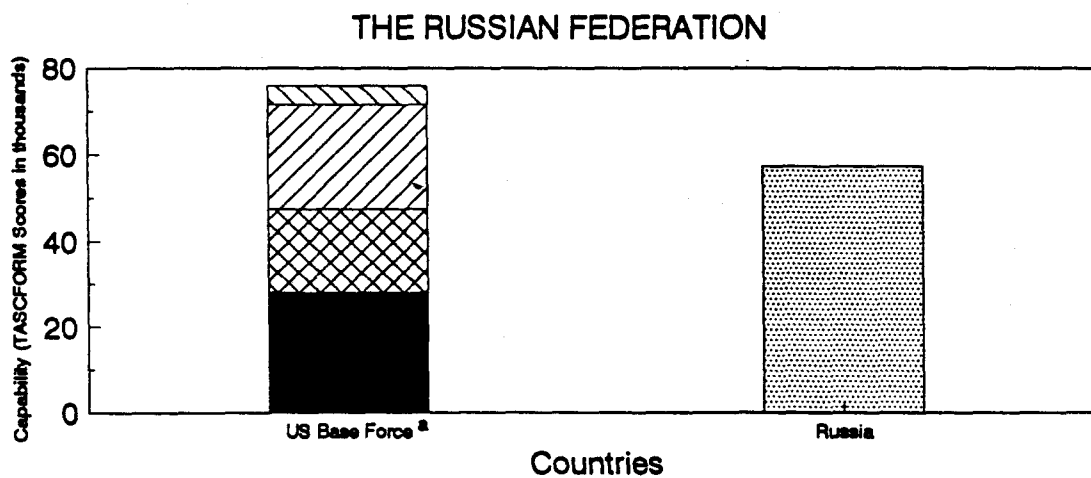
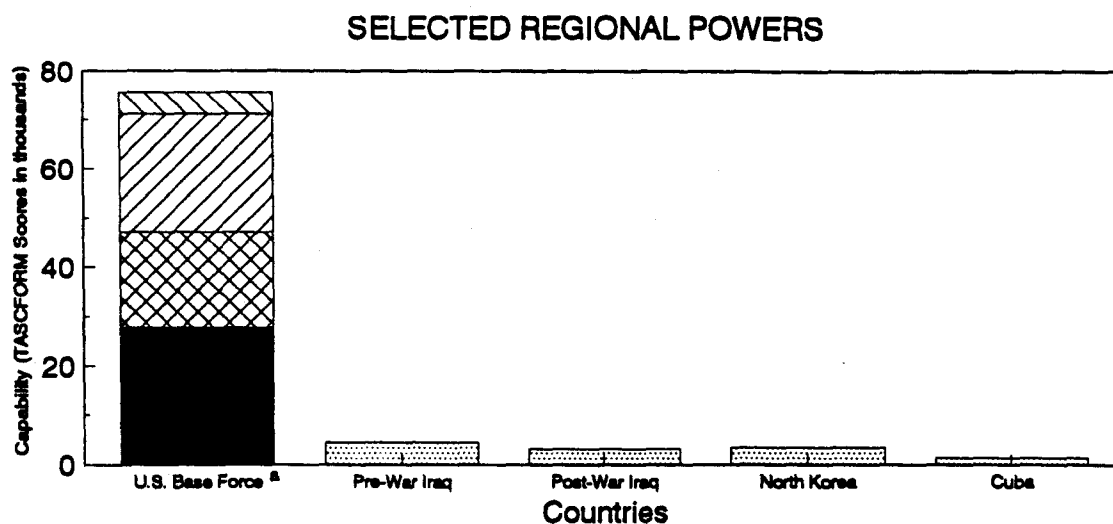
NOTES: n.a. = not applicable, rounded to the nearest \$5 million; RDT&E = Research, Development, Test, and Evaluation.

FIGURE A-1. AIR FORCE INVENTORY, REQUIREMENTS, AND AVERAGE AGE
 (Assumes Aircraft Are Retired After 22 Years)



SOURCE: Congressional Budget Office estimates from Department of Defense and Air Force data.

FIGURE A-2. COMPARISON OF THE CAPABILITY OF U.S. TACTICAL AIRCRAFT TO THE TACTICAL AIRCRAFT CAPABILITIES OF OTHER COUNTRIES



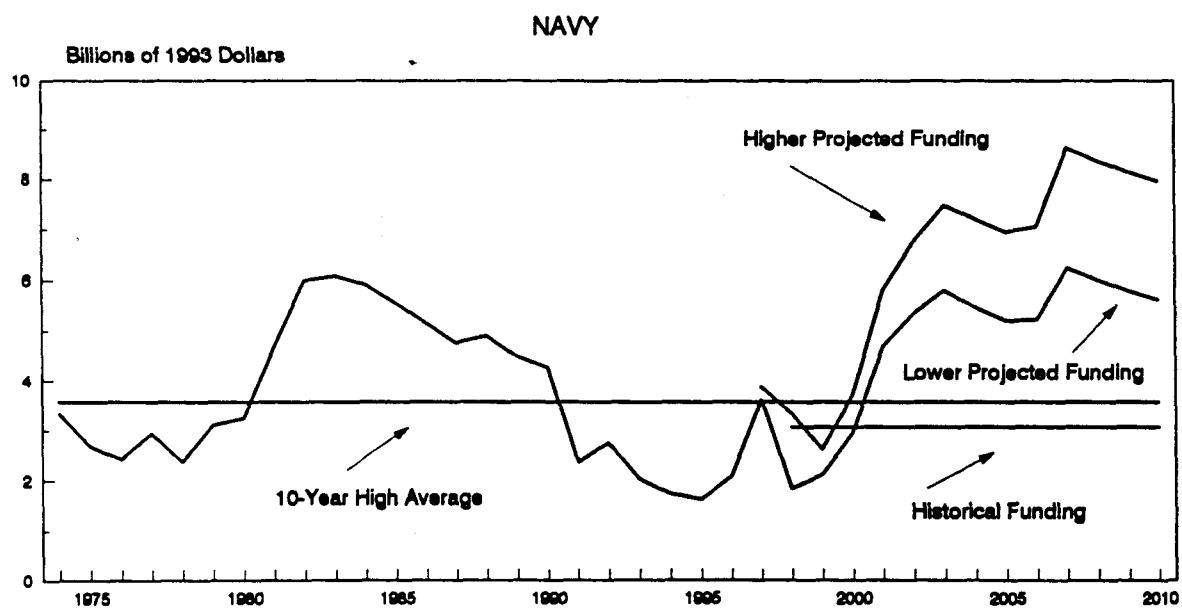
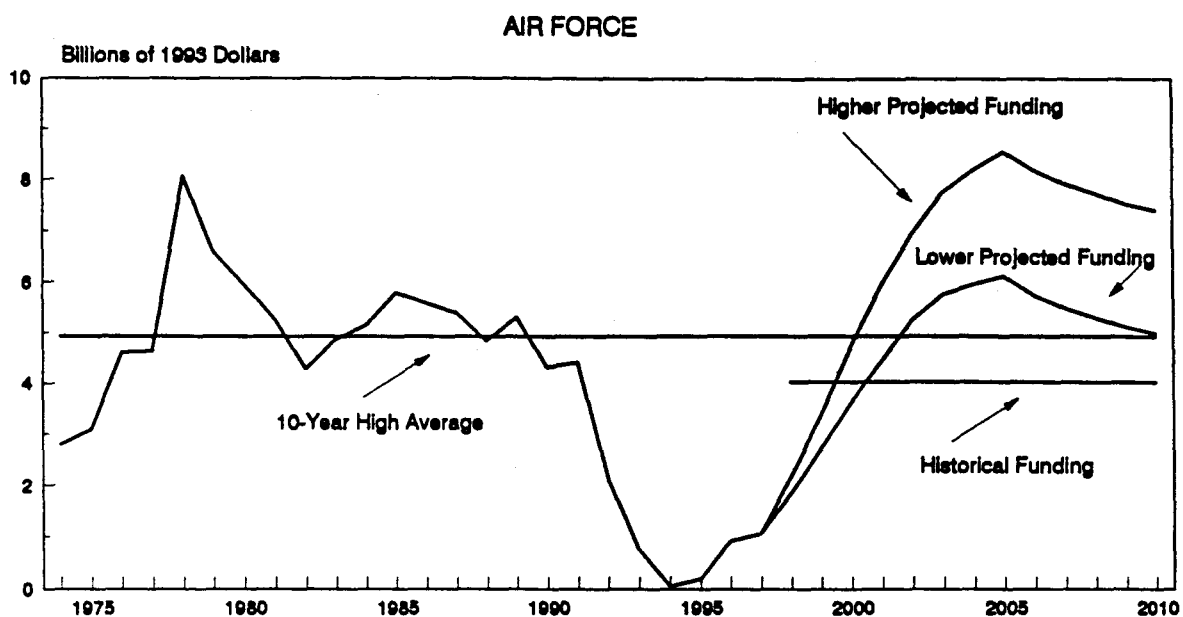
Air Force Active
 Air Force Reserve
 Navy and Marine Corps Active
 Navy and Marine Corps Reserve
 Active and Reserve Forces^b

SOURCE: Congressional Budget Office estimates from data from *The Military Balance*, (London: International Institute for Strategic Studies, various years); The Analytic Sciences Corporation; U.S. Air Force; U.S. Navy.

a. U.S. Base Force estimated from 1997 inventories and 1997 TASCFORM scores.

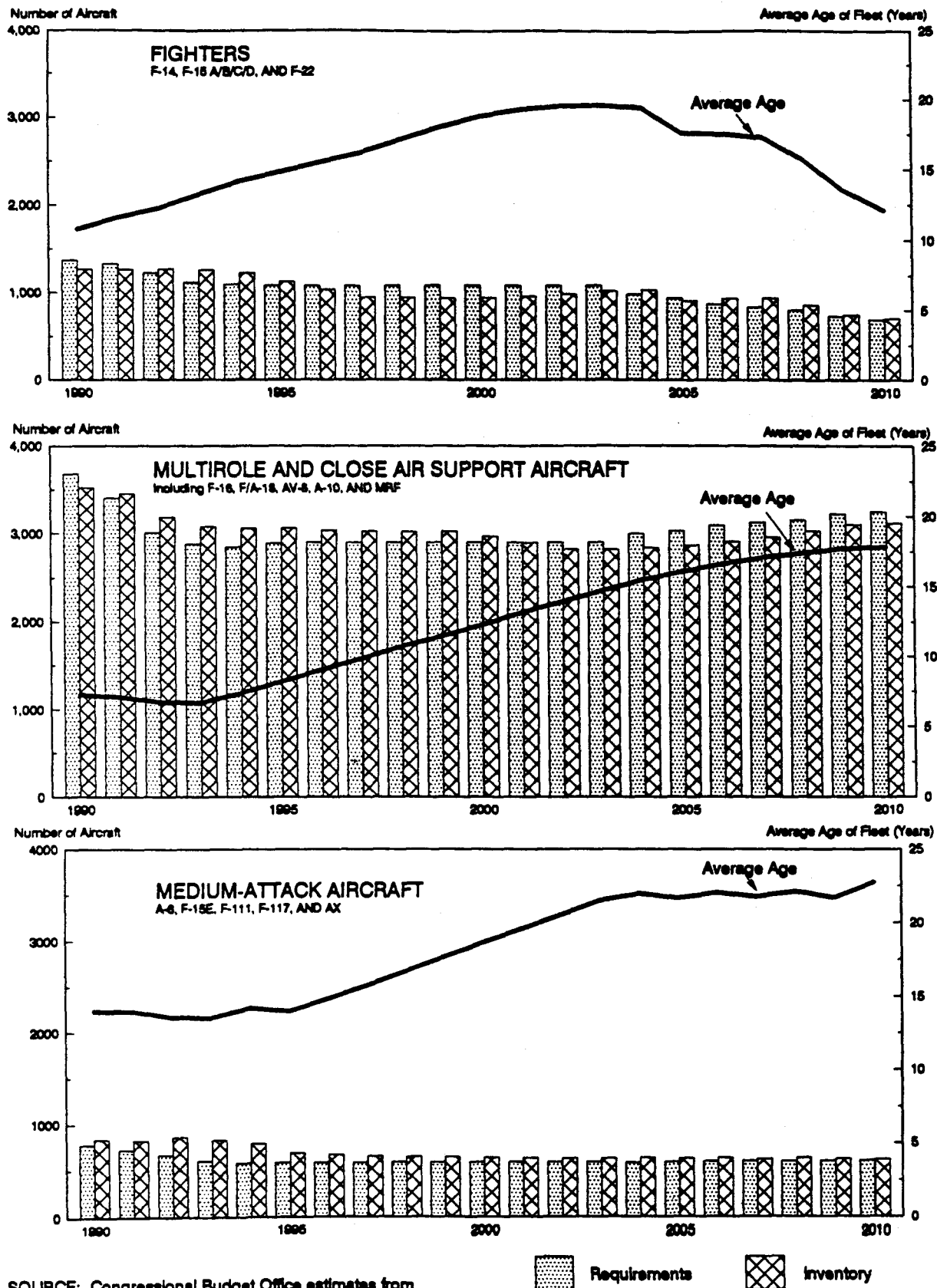
b. Sources provide insufficient detail to break out active and reserve forces.

FIGURE A-3. HISTORICAL AND PROJECTED FUNDING FOR FIGHTER AND ATTACK AIRCRAFT COMPARED WITH AVERAGE HISTORICAL FUNDING



SOURCE: Congressional Budget Office estimates from Air Force, Navy, and Department of Defense data.

FIGURE A-4. INVENTORY, REQUIREMENTS, AND AVERAGE AGE OF AIRCRAFT BY MISSION CATEGORY



SOURCE: Congressional Budget Office estimates from Department of Defense, Air Force, and Navy data.

